

BICMOS TECHNOLOGY ON SIMOX WAFERS

Abstract

A method and structure for a bipolar transistor comprising a patterned isolation region formed below an upper surface of a semiconductor substrate and a single crystal extrinsic base formed on an upper surface of the isolation region. The single crystal extrinsic base comprises a portion of the semiconductor substrate located between the upper surface of the isolation region and the upper surface of the semiconductor substrate. The bipolar transistor further comprises a single crystal intrinsic base, wherein a portion of the single crystal extrinsic base merges with a portion of the single crystal intrinsic base. The isolation region electrically isolates the extrinsic base from a collector. The intrinsic and extrinsic bases separate the collector from an emitter. The extrinsic base comprises epitaxially-grown silicon. The isolation region comprises an insulator, which comprises oxide, and the isolation region comprises any of a shallow trench isolation region and a deep trench isolation region.